

FAQs on the DIAS SEA-SEIS Expedition Departing on Saturday, 25th April 2020

Background to the SEA-SEIS project

The [SEA-SEIS project](#) has been operating since 2018, with the aim of researching the structure, evolution and seismicity of Ireland's offshore territory.

The project is led by scientists from the [Dublin Institute for Advanced Studies \(DIAS\)](#), and co-funded by Science Foundation Ireland, Geological Survey Ireland, and the Marine Institute.

In October 2018, SEA-SEIS scientists deployed a network of 18 state-of-the-art ocean bottom seismometers across the entire Irish offshore area. The aim was for the seismometers to capture data, over a defined 18-month period, which will shed light on the nature and history of the ocean floor along Ireland's coast, and on the life and movements of the great baleen whales of the North Atlantic.

Details of the current expedition

An expedition to retrieve the seismometers will depart from Galway Port at 7pm on Saturday, 25th April 2020.

The expedition will be comprised of six researchers and 15 crew, who will spend the next three weeks on board the RV Celtic Explorer. The aim of this expedition is to retrieve the hugely valuable ocean bottom seismometers and the unique data they have recorded over the past 18 months.

Why is this expedition taking place now – during a time of Covid-19 restrictions?

When the seismometers were deployed in 2018, they were programmed to run until this time period. If they are not retrieved in the coming weeks, there is a significant risk that the instruments – and the data they have recorded – will be lost.

The seismometers and the data they have collected are valued at approximately €3 million. The data recorded over the past 18 months represent the findings from one of the boldest deep-ocean research projects ever undertaken in Europe – the first project ever to do this type of research across such a large area of the North Atlantic Ocean.

The data will shed light on the nature, occurrence and frequency of earthquakes off the Irish coast, and be fundamental to further work on this topic. The current nature and history of the ocean floor along Ireland's coast is key to our understanding of how the Atlantic evolved and is evolving, and this is important for better understanding both the natural hazards and natural resources offshore. For example, slope failures triggered by earthquakes can generate tsunamis in the Irish offshore territory – the data will give us new insights into this hazard.

From the seismometers, scientists will be able to obtain recordings of earthquakes off the coast of Ireland. To date, these have been poorly understood, but we know they are generally larger than the ones Ireland has onshore. The new data will give much greater insights into earthquake mechanisms and, also, into the structure of the Earth's interior.

The capturing of information on the life and movements of the great baleen whales of the North Atlantic is also important in terms of understanding the lives of these creatures and the dangers they face. The seismometers have made continuous, 18-month-long recordings of the songs of the great baleen whales, including the Blue, Fin, Humpback and North Atlantic Right whales. These unique recordings will build understanding of the migration patterns of the Earth's largest animals and their acoustic environment, known to be crucially important for them.

What measures are being taken to ensure compliance with Covid-19 guidelines?

DIAS, the Marine Institute and the SEA-SEIS team have taken extensive, rigorous measures to minimise the chances of the virus getting onboard.

The scientists and the crew have been in near isolation for the last 14 days prior to departure, and the DIAS team will be delivered to Galway Port by a private bus that collects each individual from their house.

The team have undergone self-screening for Covid-19 symptoms 14 days ago, and are being screened again 24 hours prior to departure.

Strict protocols have been introduced on the ship, with all cabins now private, a supply of private PPE and disinfectants, staggered meal-times, and all non-essential parts of the ship, including the gym, closed for the first 14 days.

In relation to Covid-19 restrictions, generally, research is included on the list of essential services that can continue at the present time. The organisers of this expedition have been liaising closely with all relevant authorities, and have put strict measures in place to adhere to best-practice guidelines in relation to Covid-19.

Why not wait a couple of months to retrieve the seismometers?

When the seismometers were deployed in 2018, they were programmed to run until this time period. If they are not retrieved in the coming weeks, based on the life-span of the equipment, the logistical issues involved, and how the seismometers are programmed, there is a VERY significant risk that the instruments – and the data they have recorded – will be lost and irretrievable.

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